

Publishing revolution?

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Publishing revolution? Response and responsibility of the library

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The combination of the technical opportunities offered by ICT and the financial problems arising from commercial exploitation of traditional scientific journals has brought us to the brink of a publishing revolution. Conservatism in the scientific community makes a (rapid) evolution of scientific publishing more likely. Come what may, libraries have their

own responsibilities to their clients and to their parent organisations and they must play an active role in the redesign of the publishing business process. Examples are given as to how this can be done at a local level and at a national level. Optimal exploitation of the new opportunities requires the involvement of the scientists themselves.

Introduction

Maastricht is the youngest of 13 universities in the Netherlands, which also has an Open University and a larger number of colleges of professional education ('hogescholen'). Partly due to its problem-based learning approach Maastricht is popular with students and it is no longer the smallest Dutch university; it has about 11 000 students divided over seven faculties. The university is housed on two sites, an urban campus in the old city and a newer site adjacent to the teaching hospital, 'academisch ziekenhuis Maastricht' (azM), where the faculties of medicine, health science and psychology are located.

The university library is also concentrated at two locations; the library for economics, law, arts and culture, and general sciences is in the old city, the other library is on the new site and serves the faculties of medicine, health science, psychology and azM. The library has a staff of about 80 full-time equivalents, organised in a 'matrix' of departments and faculty teams. A third dimension is the project organisation. Innovation to library

services and products is largely tackled in project teams recruited from the library and other departments; within the scope of the project, team members answer to the project leader.

To support the problem-based learning the library has learning resource centres ('Studieland-schappen') for each faculty; these can also incorporate faculty computer facilities. The library is engaged in major rebuilding and refurbishing developments on both sites, with a view to providing students and other users with better (study) facilities.

The university library co-operates with other libraries both regionally and nationally. At a national level the university library co-operates especially with the other university libraries, the Royal Library, and the library of the Royal Academy of Sciences: the association of these libraries is known by its Dutch acronym, UKB. The author is currently chairman of UKB.

UKB has taken a stance in the international debate on scientific journal publishing; we will return to this later when we have taken a look at what is happening in this area and why.

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Publishing revolution?

Many people are predicting a publishing revolution in the wake of innovations in information and communication technology (ICT) centred on or around the Internet. The very ingredients of the ICT menu certainly make an appetising prospect. We will take a closer look at these in a moment. The prospects of revolution are also being fuelled by the inability of those involved to solve the 'serials crisis' in the print environment. No one seems to know how to stop the spiral of increasing journal prices and falling numbers of subscriptions. Libraries try valiantly but often unsuccessfully to meet the needs of their users and at the same time balance tight budgets, budgets that are also being called upon to meet the costs of ICT in the digital library. At Maastricht the number of journal subscriptions for the whole library has decreased slightly over the last 7 years but the costs (in Dutch guilders) have almost doubled. The picture varies somewhat according to the discipline, but the trend is similar, and discouraging in view of the library's goal to improve access to relevant information.

There are, however, forces which contrive to prevent a major revolution or, at least, to protect vested interests. These forces are the publishers, who want to protect their markets, their key journal titles and their profits; commercial publishers have to answer to their shareholders, while society publishers have to answer to their members. And the scientists themselves, who are keen to publish their research in journals which have over the years established a reputation, a reputation which is held high by measures such as impact and ranking factors. Such factors say more about the quality of the journal as a whole than that of the individual article, but are – in the absence of objective criteria – useful tools when it comes to comparative evaluation. The fact that such practices tend to preserve the status quo is the price, which has to be paid, literally and figuratively. Moreover, few scientists have to worry about the rising costs of key journal problems. This is something for the library to sort out!

These forces make it more likely that the publishing revolution will turn out to be a publishing evolution, in which existing business models are transferred from the print to the digital environ-

ment to compete with new models which are emerging on the base of the new technology. Nevertheless, in a more historical context, future generations will look back at the turn of the century, the turn of the millennium, as the start of a digital publishing revolution.

Elements of revolution

Enough has been written elsewhere of the advantages of digital publishing for the scientific world. Despite a few possible uncertainties (e.g. readability, durability) the potential advantages prevail. These include interactivity, multimedia, desktop delivery, hyper-linking, open linking of references, rapid and thorough 'search-ability', and the possibility of innovations in the area of peer review and group authoring. Hence it would be a pity if the scientific world were to stick to old habits and existing business models. The digital environment would seem to favour the idea of virtual libraries with the individual scientist at the centre, each scientist with his own virtual library and his own invisible college, but part of a coherent international system based on the 'web' and a commitment to open standards. In such a system it is the individual article, rather than a journal issue, which takes centre stage. The possibilities of business process redesign have been described most colourfully by Delamonthé et al (1999): "As the possibilities of the World Wide Web are being exploited, the old-style journal is coming apart at the seams. Each function it performed is being scrutinised, and how to deliver it is being rethought".

Some are sceptical about the possibility of change and predict that publishers will transfer their preferred models to the digital environment. There are clear indications, however, that the world of publishing is changing as we move from the print to the digital environment.

Recently we have seen increased interest in not-for-profit publishing; a particularly interesting development is that of HighWire Press (see Figure 1.) HighWire Press is an initiative by Stanford University Library to publish e-versions of renowned, learned-society journals. Perhaps the most elegant feature is the open linking of references between these journals. A reader of an article in a particular HighWire journal can click free of charge to the full text articles of all ref-

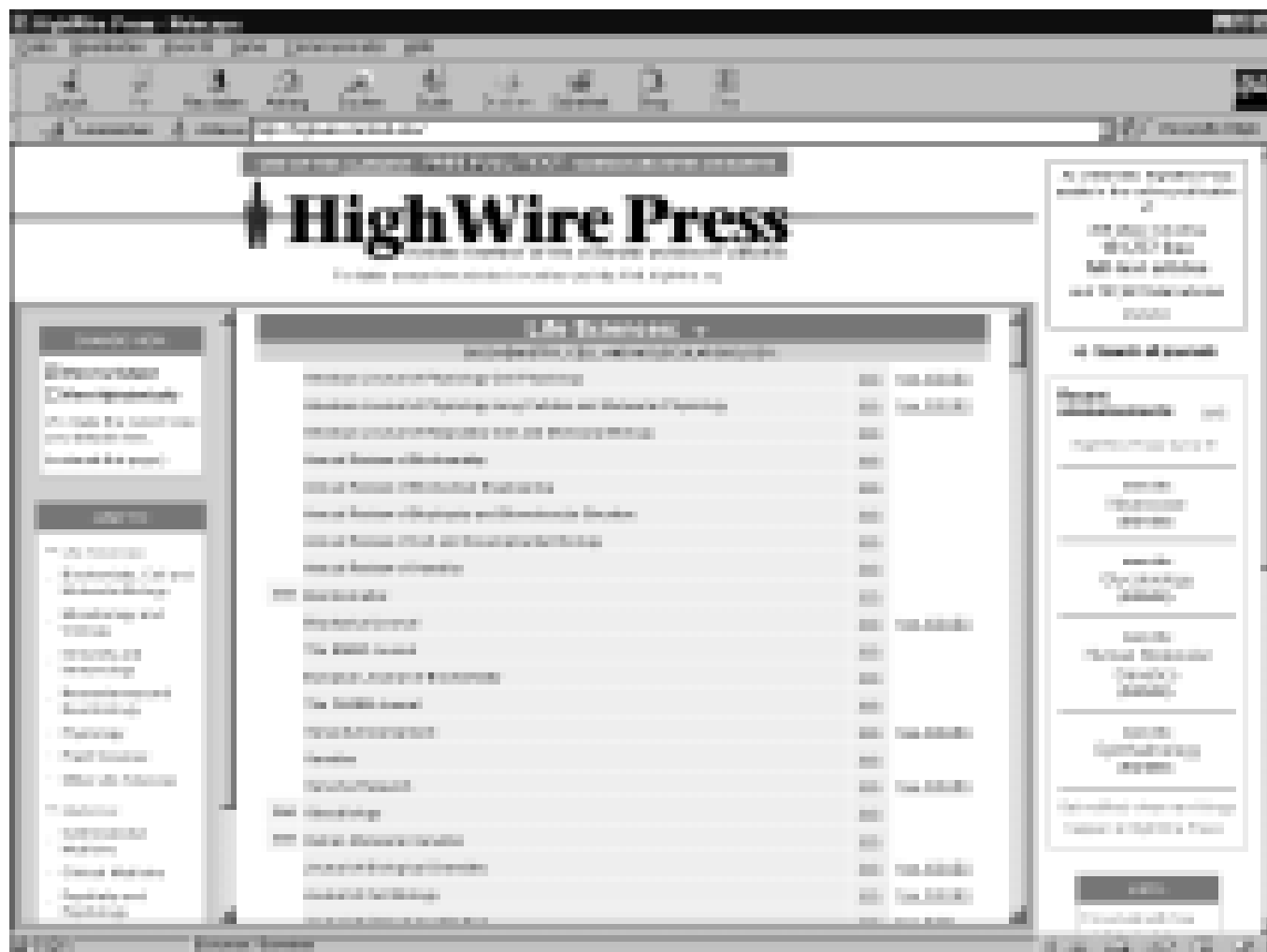


Figure 1: Homepage of HighWire Press

ferences to other HighWire journals whether he has a subscription to these or not. Incidentally, HighWire is not a small player: in the field of life sciences it boasts more top-500 e-journals than any other publisher (HighWire 2000) does.

Other universities and university libraries have rediscovered the (digital) university press and academic publishing, including the publishing of new peer review journals, often in 'niche' or new areas of scientific research. There are, by now, hundreds of such new e-journals, although most still have to make their mark in a system favouring journals with established impact factors.

The publishing of pre-prints on university servers is also becoming more and more popular in certain disciplines. The Ginsparg e-print archive is perhaps the best known of these. More recent is the initiative endorsed in Santa Fe (Van de Sompel and Lagoze, 2000) by an international

group and now known as the 'Open archive initiative' or the Universal Pre-print Service (Open Archives initiative 2000). This is no more – and no less – than the linking through the web of a multitude of such servers under a regime of open international standards for both storage and retrieval. According to Delamothe et al. (1999), "the initiative's ultimate aim is to allow readers to locate articles on different servers, *as if the articles were all in one virtual public library*".

Subscription agents, meanwhile, are also reacting to publishing innovations by attempting where possible to provide uniform interfaces to the e-journal offerings of different publishers. In such areas we experience competition between former allies, for libraries and publishers are also tackling the job of giving scientist a user-friendly interface to their virtual library. The information explosion is being accompanied by an implosion

of the business process chain, as the various parties jostle for new, stronger positions.

Responsibility of the library

Of the parties involved the library is closest to the scientist and student in their role as consumers of information. The library's goal is to provide these groups with scientific information as efficiently and as effectively as possible. In an increasingly digital world this means 'desktop delivery' of services and the presence of library services in the research and education environment. Each individual wants to build his or her virtual library into the personal desktop, the virtual library with the individual at its centre (Gilbert 1993). The library, however, does not have unlimited resources (money, manpower) at its disposal and neither does the parent organisation. The library must therefore be aware not only of the content and technical aspects but also of the economic and legal merits of licences for electronic resources. Such awareness demands a more overall view of the business chain of scientific information, including the economics of research and publishing and the legal aspects of intellectual ownership and copyright.

A party that is notably absent at most of the conferences on electronic publishing (not at Århus I am pleased to note!) is the scientists themselves. Libraries must try to involve scientists in the debate on publishing and the serials crisis and impress upon them that their habits as authors are in danger of restricting their scope as readers or consumers. At the moment, however, the priorities of most scientists lie elsewhere and therefore libraries must play a pro-active both in protecting and fostering the interests of the parent organisations and – wherever possible – drawing the scientists into the debate.

It has been argued that libraries should focus more on access and less on ownership. This is true inasmuch as we refer to the ownership of (print) collections, not if ownership means the intellectual ownership of (digital) publications of the parent organisation!

Response of the library: local level

In 1999 the library of Universiteit Maastricht considered the time was ripe for a new strategy

document. There were several reasons for this. One of the main reasons was the pressure on limited resources caused by the growing number of students, the spiralling costs of print materials and the additional costs of digital services and ICT infrastructure. Moreover, the university wanted to devote a higher proportion of the total budget to the primary functions of education and research, leaving less for services. This put even more pressure on the library and other service departments.

The strategy document focussed on four main themes, namely the traditional library, the digital library, the learning and self-explanatory library, and the business-like library. The strategy document was therefore given the name 'Four-in-hand'. In this way we wanted to stress the need to work synchronically and coherently on different aspects of library policy.

For each theme, goals were identified and activities and projects were enumerated.

The strategy document was sent to all faculties for comments and for suggestions as regards priorities. The document met with broad approval, although faculties differed somewhat in their comments and priorities. The strategy document – together with the reactions of all faculties – was taken as the basis for university library policy in the coming years. Subsequently, a project programme was approved for the year 2000. Most of these projects are funded centrally, as opposed to regular library services, which are financed by the faculties.

I will suffice here by mentioning one of two projects or activities for each of the themes, and then go into a little more detail on projects, which have relevance to the subject of the virtual library and publishing revolution.

An important project regarding the traditional library is the improvement of the array of collections in open stacks in the library; this project encompasses subject classification, sign-posting and user aids. It also has a spin-off in the self-explanatory library. In the area of the learning and self-explanatory library we have just completed a review of the requirements of students in the field of library and information handling skills at the various stages of their study. Faculties will now be invited to compare the current situation with the ideal picture with a view to introducing new or better modules into the curri-



Figure 2: Home Page of the Maastricht University Library

culum. Some of these modules will be automated and offered to the student as part of the digital library services.

A 'business-like library' means an efficient organisation with a clear policy in the area of human resources management. Efficiency of operation is one of the aims of the library rebuilding and re-location plans. Projects in this area include the integration of the 'Studielandenschappen' with the computer facilities of faculties, the remodeling of library offices on the lines of functional rather than personal workspace, and the redesign of loan desks.

Quite a few projects focus on the digital library and some of them bear relevance to the publishing revolution. Projects aimed at the students include the digitisation of learning resources, digitisation of syllabi and the development of 'virtual classrooms'. Campus licence to e-journals

for staff and students alike can facilitate such developments. The library is also looking at the selection and classification of Internet resources, while for each faculty 'portals' are being developed for staff and students.

Meanwhile the library is gearing up for the transition from print to electronic journals. In this respect we are trying to acquire as many e-journals as possible, which are offered as a bonus to existing print subscriptions. As a gateway we are trying out *SwetsNet* (Swets is the subscription agent for Maastricht). Together with other university libraries we have subscribed to several HighWire e-journals and will be testing their software ('LOCKSS') for local storage purposes. In the meantime we will be developing specifications for our 'digital stacks', on which we store a growing number of pre-prints and other products of the university's research. Together with other

university libraries we are examining the idea of 'virtual collections', both in the print and digital environments. The goal of such collections is to counteract the ill effects of journal price increases whereby libraries tend to cancel unique subscriptions in the periphery while maintaining similar core collections. Together with faculties and with other university libraries we are involved in the development of new peer-reviewed e-journals, a recent example being the *International Journal of Integrated Care*, which will be launched in 2000.

It is of the utmost importance that faculty staff understands the rationale and the relevance of the library's programme. Therefore the library spends an increasing amount of effort in consultation, communication and PR. This is done through the faculty library committees, the Home Page of the University Library, and the electronic in-house journal (*Publicatie 2000*) of the library and the computing centre (see Figure 2.)

Response of the library: national and international levels

No library should shirk the responsibility of acting at a local level but it is at a national or an international level that the impact of library strategy can be felt most.

Several years ago our library and several other university libraries in the Netherlands and Germany engaged with Pica in the so-called WEBdoc project, which aimed at providing web access to electronic resources of both universities and publishers. In terms of the latter the project was a disappointment, as the prices required by commercial publishers at that point in time for their electronic products (surcharges of 10% or more on the print prices) were beyond the budgets of the average libraries. The proposed licensing agreements were complex and far from liberal. The WEBdoc experience prompted the issue of the German-Dutch statement on licensing principles (UKB-GBV 1997) and led indirectly to contacts with library consortia from USA and UK. These contacts marked the foundation of the International Coalition of Library Consortia (ICOLC). ICOLC has since issued its own statement on fair licensing principles (ICOLC, 1998) and has become a key international forum with regard to electronic resources and the purchasing of these by groups (consortia) of libraries.

Since the foundation of ICOLC in the spring of 1998, UKB has undergone a gradual transition from an association, with a goal to improve library services through co-operation and resource sharing, to an association-cum-consortium, with more focus on shared purchasing and national licensing agreements. At the same time UKB has assumed a more active role in the discussion with other parties, notably publishers but also subscription agents and representatives of scientists and university administrations.

UKB is in the process of developing its own strategy for the coming years and much of this will be aimed at the further development of the virtual library in the Netherlands under the most favourable conditions in terms coverage, convenience and costs. Although libraries will never agree on all aspects of the ideal virtual library there is a growing awareness of the merits of co-operation, cohesion and collective bargaining.

A central theme in UKB's strategy is the pursuit of new business models for publishing in the digital environment, which recognise the efforts all parties involved and which make optimum use of the new technology. Within this overall strategy UKB is advocating:

- Installation of university servers for the digital publications of all university staff and the inter-linking of such on the basis of open standards
- Academic publishing of new, peer-reviewed electronic journals on a not-profit basis
- Review of persisting copyright practices, notably the exclusive transfer of copyright to publishers
- Open discussions with publishers on price policies, licensing agreements and new publishing models
- Negotiation by UKB of 'national' licences for key resources for its members
- Improvement of transparency of and access to the virtual library

and, not in the least:

- Involvement of the scientists themselves in the debate on publishing and the virtual library

UKB is aware that fundamental changes to existing practices can only be made if other parties co-operate. UKB has already discussed its policy with the national funding body for the innovation of scientific information (known by its Dutch acronym, IWI), with the vice-chancellors of universities in the Netherlands, and with some major publishers. The initial responses are en-

couraging. UKB hopes that other associations or consortia, and ultimately international bodies, such as ICOLC, will actively support the strategy.

Conclusion

The time is ripe for fundamental changes to the scientific publishing process, to ensure sustainable and effective information exchange. The digital environment generates new opportunities for scientific communication and publishing and calls for new business models. Universities and research institutes should take responsibility for the development of such models in the interest of research and education.

In the emerging virtual library there is a need for transparent desktop services, services which should not be hampered by technical, financial or legal factors.

Libraries should take an active role in the realisation of such a scenario. Increasingly this will mean involving the scientists themselves, not only as consumers but also as producers of information.

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